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ABSTRACT

Language used in situations in which speakers cannot rely on shared social, physical, or historical contexts has been referred to as "decontextualized." Many researchers believe that the use of decontextualized language is at the core of literacy--that reading and writing are consummate acts of decontextualization. Somewhat intermediate between face-to-face oral communication and writing is the challenge of talking on the telephone. Children's telephone talk offers an ecologically valid context to ascertain developmental components of metacommunicative awareness of the need to be clear for one's communicative partners and of how to compensate for their physical absence. The purpose of this study was to examine children's story narratives over the telephone versus face-to-face interaction to explore the effects of telephone use on children's discourse. Sixty 4-, 6-, and 8-year-old children told stories based on a wordless picture book to a communicative partner present in the interview room, and then told the story to that same person on the telephone. The study found that four-year-old children created quite different story narratives over the telephone from those related in face-to-face interaction in terms of length, narrativity, and revision. They used significantly more words, syntactically independent T-units, narrative elements, and revisions in their storytelling on the telephone. They adjusted to the demands of the different communication tasks. The only measure not sensitive to treatment differences was specificity, indicating that story telling is one communication task that may not impose as great a demand for specific information as for narrativity under the telephone condition. From face-to-face communication to reading and writing, there is a continuum from contextualization through decontextualization, to further recontextualization. This study indicates that telephone communication resides somewhere on this continuum in terms of the demands the medium imposes for decontextualization. Contains 11 references. (SD)

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CHILDREN'S NARRATIVE EXPRESSION OVER THE TELEPHONE

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ABSTRACT

Many researchers believe that the use of decontextualized language is at the core of literacy, that reading and writing are consummate acts of decontextualization. Somewhat intermediate between face-to-face oral communication and writing is the challenge of talking on the telephone. Children's telephone talk offers an ecologically valid context to ascertain developmental components of metacommunicative awareness of the need to be clear for one's communicative partners, and of how to compensate for their physical absence.

Sixty 4-, 6-, and 8-year-olds told a story from a wordless picture book to a present communicative partner, and to that same person on the telephone. These within-subjects treatments were counter-balanced. Children from age 4 created quite different story narratives over the telephone from face-to-face interaction in terms of their length, narrativity, and revision. They used significantly more words, syntactically independent T-units, narrative elements and revisions in their storytelling on the telephone. They adjusted to the demands of the different communication tasks.

From face-to-face communication to reading and writing, there lies a continuum from contextualization through decontextualization, to further recontextualization. It is proposed that telephone communication resides somewhere on this continuum in terms of the demands the medium imposes for decontextualization. It is further proposed that research be conducted on the effects of telephone experience on early literacy development.

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Language used in situations in which speakers cannot rely on shared social, physical or historical contexts has been referred to as "decontextualized" (Richard & Snow, 1998). Talking on the telephone can be seen as intermediate between contextualized and decontextualized language contexts. Deployment of decontextualized language is required in many academic situations, such as writing book reports, stories and compositions, and performing on oral and written exams. However, moving from highly contextualized communication to the recontextualization involved in reading and writing (Cameron, Hunt, & Linton, 1996) involves a challenging transition for many children. Telephone talk can be an appropriate medium for examining and facilitating children's developing decontextualization skills, further enhancing emergent literacy.

Cameron and Lee (1996) investigated the use of the telephone for referential communication by children aged from 3 to 8. The children produced more adequate referential information over the telephone than face-to-face. Children were also found to be differentially adaptive in the different communicative situations. The interaction between age and condition was significant: The younger children adapted their messages more than older ones on the telephone.

The purpose of the present study is to examine children's story narratives over the telephone versus face-to-face, to explore the effects of the use of a telephone on children's discourse. Based on the previous study, we hypothesized that the quality of children's story narratives would be higher over the telephone than in face-to-face communication. Face-to-face story narratives are provided for a physically present listener, while narratives on the telephone are for the listener at a distance in space. This kind of difference between face-to-face and telephone communication is hypothesized to result in more detailed and explicit language in the telephone context.

METHOD

Subjects:

Data were collected from 60 children in local daycare centers and one elementary school. The sample comprised 3 age groups: 17 four-year-olds (mean age 4-7, 9 boys and 8 girls), 23 six-year-olds (mean age 5-11, 10 boys and 13 girls) and 20 eight-year-olds (mean age 7-11, 10 boys, and 10 girls). Initially, parents and the children themselves gave permission for participation in the study.

Materials:

Children were presented with a wordless picture-story book by Mercer Mayer titled *Frog, Where Are You?* This book afforded support for the production of a narrative. It was an engaging story, which in pretest elicited extensive narrativity.

Pilot work advised shortening the story, especially for younger participants. So some passages of the adventure were omitted, thus matching the cognitive level of the young children in our study.

Two electronic intercom phones with a ten-metre cord operated by battery were used in the study. They are particularly designed to be attractive to children, and they allow for talk from one room to another. They both look and work very similarly to real phones. A magnetic tag connected one of the phones to a tape recorder, which recorded the whole story-telling process.

Procedure:

Two experimenters were involved in the procedure. The picture-book was presented under two different conditions: face-to-face and over the telephone. In the face-to-face condition, the child was taken from the classroom by the "listener" experimenter to meet with the "instructor" in a quiet room within the school for the interview sessions. The child was first apprised of the presence of the tape-recorder beside the instructor and asked permission for its use. Then the child was asked by the instructor to look through the picture-book quickly in order to give him/her a general idea of what the story was like. Then the instructor asked the child to tell the story in the book to the listener-experimenter. The instructions given the child were: "I am going to show you a story book. Let's go through it quickly first. Now tell (the listener-experimenter's name) a story about this book."

In the telephone condition, after the listener-experimenter took the child to the interview room, the instructor informed the child that the listener had to leave the room but would talk to the child later. After the listener-experimenter left the interview room, the child was asked to tell the same story over the telephone to the latter. The instructions given to the child were: "Let's call (the listener-experimenter's name) and then you can tell him/her on the phone what the story is in this book." The instructor made the phone call to the listener-experimenter in the room nearby, then handed the phone to the child, and the listener-experimenter on the other end of the telephone line continued the elicitation of the story-telling from the child.

The order of the two conditions was counterbalanced. The time interval between two condition sessions was about one week. Children's narratives for both were tape-recorded and their transcriptions in both contexts were scored separately for specific variables that reflect the major aspects expected to be sensitive to the differences between the two contexts.

Scoring of the story narratives and reliability:

Length: Two measures of length, including the total number of words and total number of T-units, were employed in our study (Richard & Snow, 1990). The total words were counted for the total words that have meaning and the contractions were counted as one word. The T-unit was defined here as the shortest unit of a grammatically independent sentence (Hunt, 1970).

Specificity: The specificity variable reflected the degree of explicitness of the children's narratives (Cameron, Linton, & Hunt, 1988; Richard & Snow, 1990; De Temple, Wu. & Snow, 1991; Wu, De Temple, Herman, & Snow, 1994). The number of the clauses or phrases that were used to identify objects or locations was scored as a measure of specificity in the present study (e.g., "the boy with the big boots," "The boy was on the reindeer's neck," or "The dog is behind the rock").

Narrativity: Narrativity is considered a defining characteristic of story narratives (Hudson & Shapiro, 1991). Two narrative elements were included in the scoring (De Temple, Wu & Snow, 1991; Wu, De Temple, Herman, & Snow, 1994): mention of character's internal states

(e.g., "The boy was really upset when he saw the frog was gone"), and extra pictorial narratives that go beyond the pictures in the story book (e.g., "The little boy is going to bed and so is his dog," "The frog has babies and a wife").

Revisions: Revisions were identified as a variable sensitive to children's responses to the task demands of decontextualized instructions (Richard & Snow, 1990; De Temple, Wu, & Snow, 1991; Wu, De Temple, Herman, & Snow, 1994). Revisions were indicated by false starts and self-corrections the children made during their narrations (e.g., "He called for the dog, I mean, the frog").

Interrater reliability using the Pearson Product-Moment correlation coefficient procedure was .99 for Total Words, 1.00 for T-units, .89 for Specificity, 1.00 for Narrativity, and .80 for Revision.

RESULTS

Table 1 gives an example of stories produced under the two different conditions by the same child and scores on the five dependent measures.

A repeated measures MANOVA with age group as a between-subjects factor and condition as a within-subjects factor was performed in order to test for the effect of age group and condition on the five indices of children's story narrative expressions described above. A significant overall effect for condition was found, $F(5, 47) = 3.75$, $p < 0.01$. There was no significant effect for age group, $F(10, 47) = 1.71$, $0.05 < p < 0.10$, and there was also no effect for the interaction between age group and condition, $F(10, 47) = 0.66$, $p > 0.5$.

Univariate F-tests showed that there were significant condition differences for the four measures of total words, T-units, narrativity and revision, $F(1, 47) = 11.92$, $p < 0.005$; $F(1, 47) = 9.31$, $p < 0.01$; $F(1, 47) = 10.50$, $p < 0.01$; $F(1, 47) = 4.40$, $p < 0.05$, respectively. No significant effect was revealed for the measure of specificity, however, $F(1, 47) = 0.37$, $p > 0.5$. Figure 1 shows the differential effects of the two treatments on the four performance indices that showed themselves to be sensitive to the interventions.

DISCUSSION

Children from age 4 create quite different story narratives over the telephone from face-to-face expression in terms of their length, narrativity and revision. They used more words, syntactically independent T-units, narrative elements and revisions in their story-telling on the telephone. Four-year olds were already capable of adjusting to the demands of different communication tasks. In order to make the distant listener understand and enjoy the story being told, our children carefully and deliberately employed more T-units involving completely structured sentences to make the descriptions more accurate and explicit, at the same time, they elaborated extra pictorial cues and character's internal states to make their stories more attractive and vivid to their audience when their visual cues from the pictures were absent and especially when the interlocutor's facial expressions and gestures were not available.

The only measure which was not sensitive to treatment differences was specificity. It seems that story-telling is one communication task that may not impose so great a demand for specific information as for narrativity under the telephone condition. Another factor which might account for this difference is the nature of the wordless picture book used in our study. Mercer Mayer's picture-story books involve a series of exaggerated and vivid actions. Background information such as the objects around the characters or the locations of them seem not to be a priority for children in this narrative task. In contrast, our previous telephone study (Cameron & Lee, 1996) revealed that in a referential communication task involving instructions about the solution of a Chinese puzzle, children used significantly more specific information over the telephone than in-person.

Another interesting finding is that age did not show a significant overall effect on children's performance, which might be due to the simplicity of the story-book, and thus, the ease of the task at all ages.

The present study both confirmed and extended the findings of Shatz & Gelman (1973), in which 4-year-olds produced different messages when talking to 2-year-olds as opposed to peers or adults. In our study, it is the context of the communication rather than the audience age that imposed different demands to children's speech. Children at 4 years were good at analyzing the communication

context and performed as adequately as if they were facing the challenge of different-aged listeners. Here, though, we challenge several studies on child telephone communication (for example, Bordeaux & Willbrand, 1987), which were pessimistic regarding the effects of the telephone on children's discourse. Bordeaux and Willbrand (1987) reported that many of pragmatic conversational rules were not mastered until 5 years. They suggested that the majority of the responses elicited by the telephone would be single words, and therefore, the telephone would not be a "productive" medium. The contrast between our findings and theirs could result from the different type of tasks used. If they required telephone communication on a specific topic or event, such as the story-telling task in the present study, or a script from children's daily life rather than simple turn-taking or general greetings, children's discourse performance might have been facilitated, just as we were able to observe.

Most previous studies of children's telephone communication examined pragmatic aspects of telephoning skills. Our recent (Cameron & Lee, 1996) and the present studies have been more focused in the development of semantics of this unique type of communication. Decontextualization of language is at the heart of early literacy development (Snow, 1983). Children gain language proficiency through speaking and listening, to ultimately, reading and writing with an increased distance from referents both in time and distance. Reading and writing are not only decontextualized language in terms of distance in time and space, but also require recontextualization of knowledge as readers and writers must create meaning both into and from text. (Cameron, Hunt & Linton, 1996). When writers convey their ideas in a text to readers at a different location in time and space, they must spend time in planning, goal-setting, and in organizing the text in a manner that facilitates readers to comprehend the textual meaning when the rich pragmatics of oral communication such as facial expression and gesture are not available to assist the comprehension (Cameron, Lee, Webster, Munro, Hunt, & Linton, 1995).

From face-to-face communication to written expression, there lies a continuum from contextualization through decontextualization, to further recontextualization. Telephone communication resides somewhere on this continuum in terms of the demands the medium imposes for decontextualization. Writing-speaking relationships have been debated by both researchers and teachers (Sperling, 1996), our research on children's telephone communication would bring a strong

association between the two seemly distinctive language processes. Future studies are called for to examine the potential effects of telephone communication in enhancing children's sensitivity to needs of communicative partners who are even more distant from the immediate, i.e., the readers of their writing.

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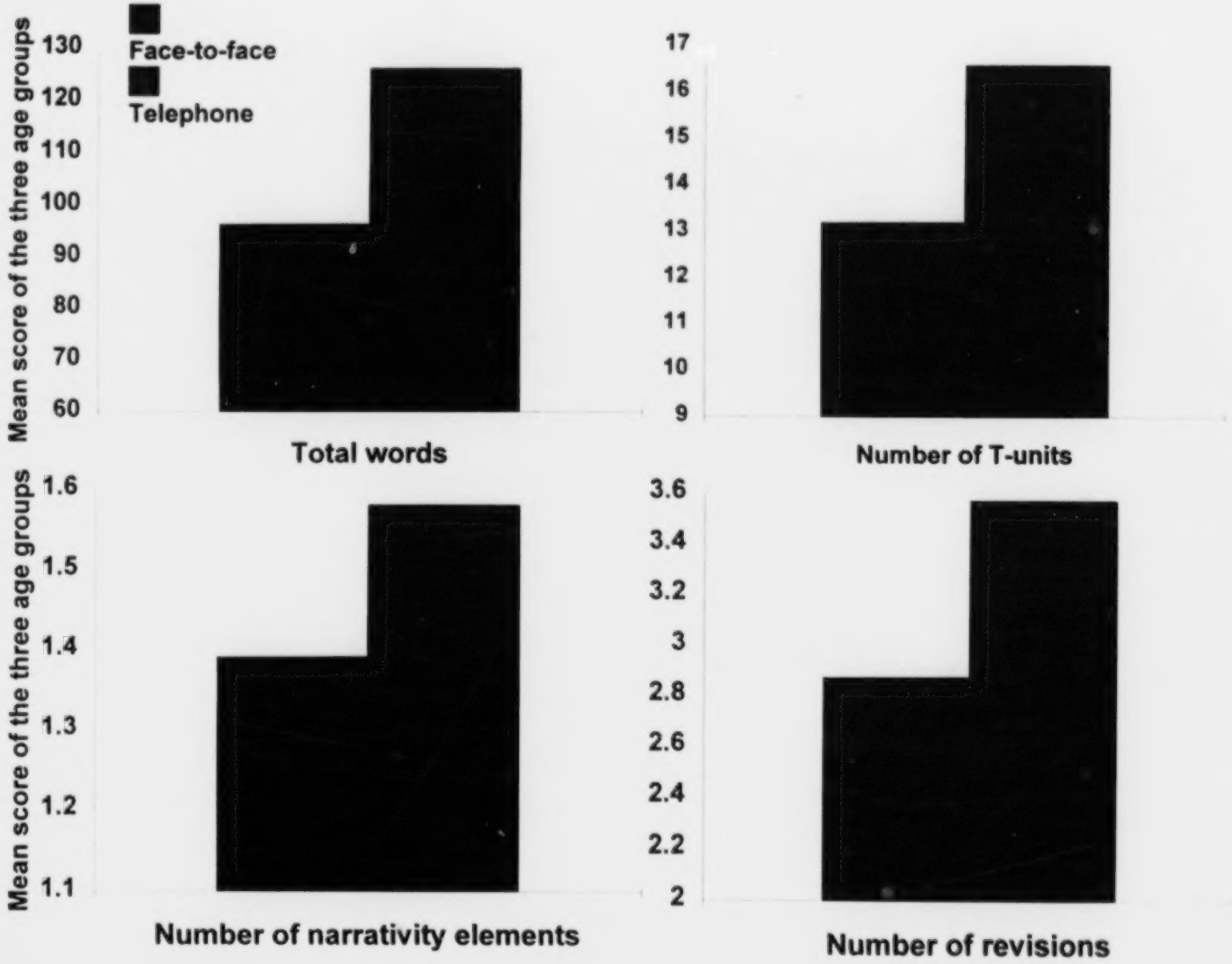
Table 1
Sample Story Narratives
Face-to-face by a 6-year-old girl:
A little boy and a little dog looking at the frog in the jar, went to bed, and the frog sitting in the jar. They woke up and the frog's not in the jar any more, looking in the boots and the dog is looking with him. The little boy is calling to him. He's looking over the rock, there 's a moose behind the rock, and the little boy on his head. Moose is chasing the dog, it's....fall in and they got into the water. He hears the frog, he's looking in the log and there is the frog with his family. He gets to take the big, a little frog with them.
Scores:
Total words = 114; T-unit = 16; Specificity = 2; Narrativity = 2; Revision = 1
On the Telephone by the same girl:
The little boy is looking at the frog. And he hasn't gone to bed yet. The little boy is going to bed and so is his dog. The frog is getting out of the jar. The little boy woke up, the dog did too. Frog's not in the jar anymore. He is looking everywhere, he is looking in the boot. The dog is stuck his head in to the jar. And he was crying out: Frog where are you? and the dog was sniffing cause he smelled bees. Looking, gone over the rock, there is an owl. The dog is sniffing in front of the rock. There is a deer behind, there is a moose behind the rock and he lifted up on his little boy up on his head and the dog's getting into the, between the rock. The deer is chasing the dog and the little boy's still on the deer's head. The deer is pushing them both in to the water. And they fell in to the water. He hears the frog. And so does the dog. They are looking over log. The frog's behind the log and it has babies and a wife. And he is saying good bye and he has a little baby frog with him.
Scores:
Total words = 212; T-unit = 31; Specificity = 4; Narrativity = 8; Revision = 2


Face-to-face
Telephone
Mean score of the three age groups
130
120
110
100
90
80
70
60
Total words
17
16
15
14
13
12
11
10
9
Number of T-units
Mean score of the three age groups
1.6
1.5
1.4
1.3
1.2
1.1
Number of narrativity elements
3.6
3.4
3.2
3
2.8
2.6
2.4
2.2
2
Number of revisions